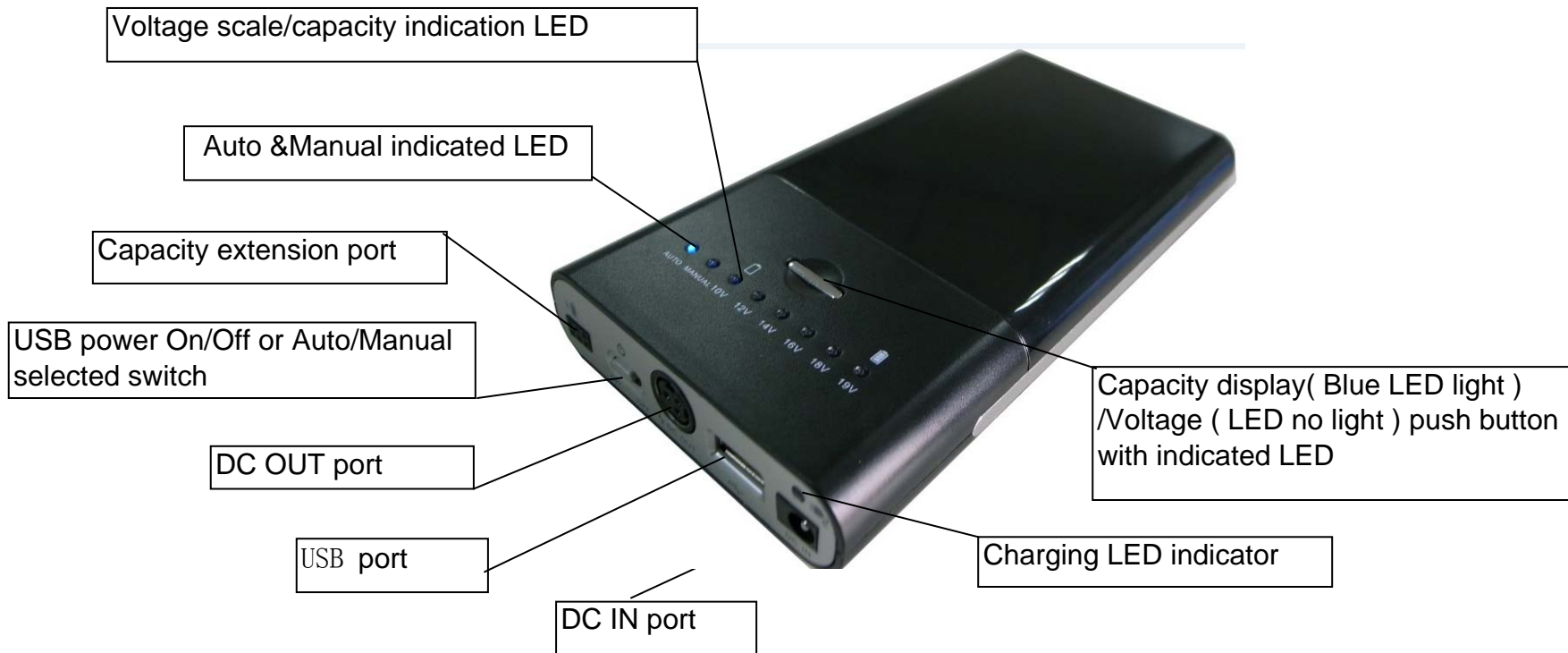


MP3450L (Laptops Type)

Application : N.B / Netbook / MID / Micro-projector / Mobile phone / iphone / ipod .

I. Operation panel



II. Function introduction

- ◆ Adopt MCU intelligent control design.
- ◆ Light weight(0.4kg) , fashion appearance.
- ◆ Wide charging input voltage range: 8~24V
- ◆ Charging time: 3~4 hours
- ◆ Three charging method: by **a.** Power adapter **b.** Car charger **c.** Solar panel charger
- ◆ Charging LED display: Orange: on charging; Green: fully charged
- ◆ Two operation modes of selecting suitable voltage for your laptops: 1,Auto mode 2,Manual mode
- ◆ Auto mode : MP3450L will automatically scan and setting the proper voltage(between 10V and 19V) for your device.
- ◆ Manual mode : 6 scales output voltage (10V/12V/14V/16V/18V/19V)can be adjustable.
- ◆ Output current: 4 ~ 4.5A
- ◆ USB output voltage/current: 5.25~5.4V / 1.5A
- ◆ Voltage/capacity display: 6pcs blue LEDs indiate the relate voltage scale and remaining capacity in different state .
- ◆ Output capacity: 10V/4.9Ahr, 12V/4.08Ahr, 14V/3.5Ahr,16V/3.06Ahr,18V/2.71Ahr,19V/2.57Ahr
- ◆ Automatic lock voltage scale function: It will auto lock output voltage when loading current is over 0.5A in the auto mode;The output voltage scale will be auto locked when connected the loading current is over 300~500mA in the manual mode. At this moment, the voltage is non-adjustable to avoid damage the device from error operation on line.The push button will light blue to indicate in the capacity display state.
- ◆ With extended capacity function : It can extend the battery capacity by extended battery pack MP3460 from 50W to 100W.

- ◆ With pass through charging function : It can offer power to your device in the meantime,and will charge your device's internal battery fully in prior and after also it can be charge the MP3450L from AC power adapter .
- ◆With uninterrupted power system function:MP3450L will power your device in time if the AC power shut down to avoid your device from shutting c
- ◆With multi-protection function:Over charge /over discharge/over current/over voltage/short circuit/over temperature protection.
- ◆Low self-discharge ,can be store 1 Years Without Using
- ◆Cycle life:300~500 cycles
- ◆Safety Certification: CE,3C,RoHS

III. Electric specification

| NO. | Item | Rated performance | Remark |
|-----|----------------------------------|--|----------------|
| 1 | Battery cell | Li-Polymer | |
| 2 | Battery pack power / Capacity | 51Wh(13,600~14,000mAh) | |
| 3 | DC OUT output voltage | 12~19V (Auto setting) | in Auto mode |
| | | 10V, 12V, 14V, 16V, 18V, 19V(Adjustable) | in Manual mode |
| 4 | Ripple voltage | ≤100mV | |
| 5 | Output DC/DC transfer efficiency | 94~97% | |
| 6 | DC OUT port's Power | 49Wh | |

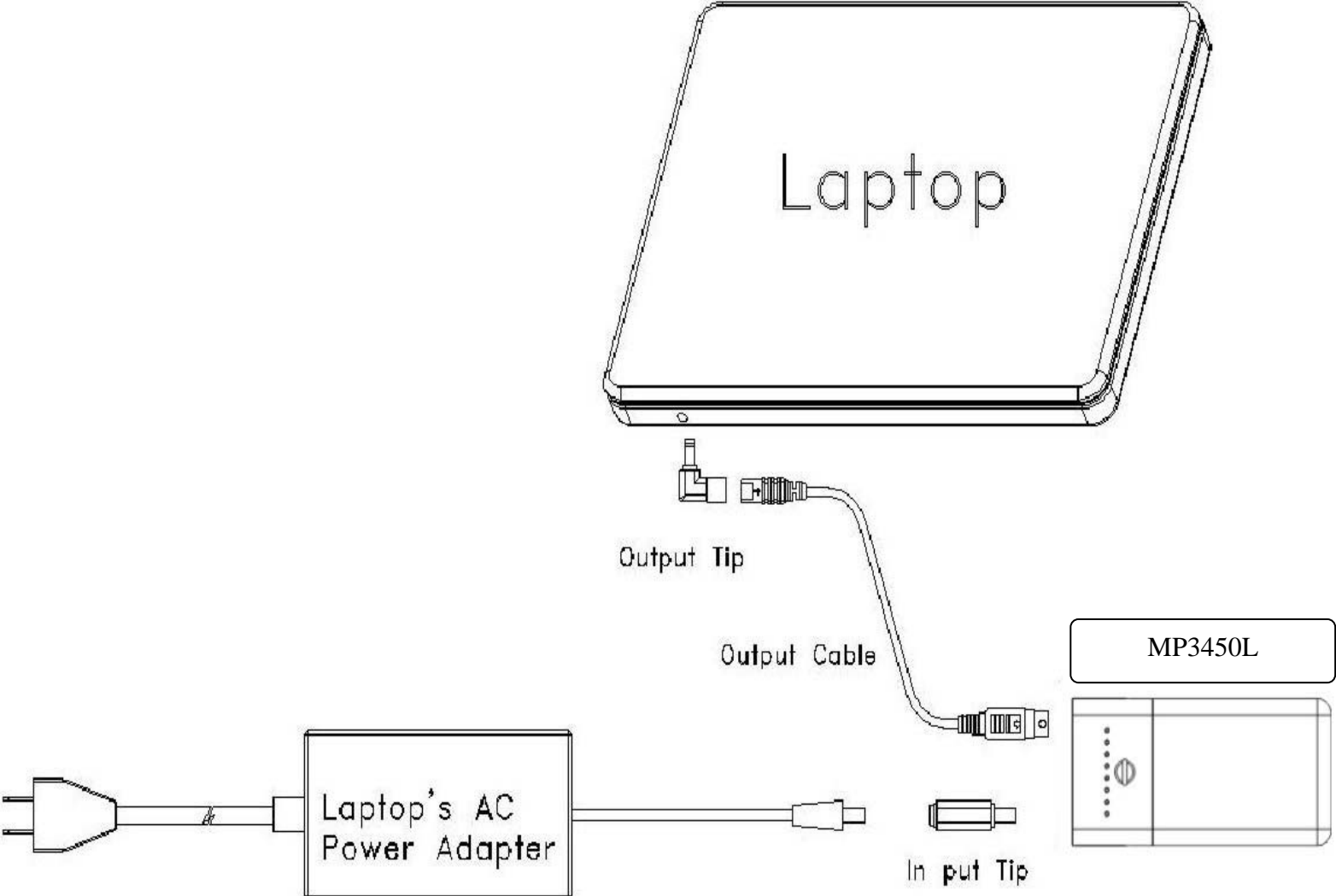
| | | | |
|----|------------------------------------|---|---|
| 7 | DC OUT port's output current | 4A(Constant),4.5A(Max.) | |
| 8 | DC OUT over-current protection | 5~7A | |
| 9 | USB port's output voltage | 5.25~5.4V | |
| 10 | USB port's output current | 1.5A (Constant) , 2.0 A (Max.) | |
| 11 | USB port's over-current protection | 2.2~3.0 A | |
| 12 | Self-discharging current | a,<120uA(Power OFF) b,<70mA(Power ON) | |
| 13 | DC IN port's charging voltage | 9~24V | |
| 14 | DC IN port's charging current | 800~1200mA | |
| 15 | Charging time | 3~4 Hours | |
| 16 | Charging indicator | Orange: charging , Green: fully charged | |
| 17 | DC IN port's JACK dimension | 5.5~6*2.0~2.1*10.5 (inside "+",outside "-") | |
| 18 | AC Power adapter voltage/current | Same as the original AC power adapter of the connected Laptop | Not contained in the package |
| | | 12~20V/ >2000mA | the DC input jack be plug by solar panel output ;it can't work on pass through charging state . |

| | | | |
|----|--|---|---|
| 19 | Solar panel charger input voltage/current | 28~35V/ 50~ 2000mA | charged by solar panel plug into the Capacity extend port ;it can work on pass through charging state . |
| | | 12~24V/ 50~ 2000mA | The Sun-booster adapter is optional for charged by the solar panel ;the output side (3pin plug)connected to the Capacity extend port. it can work on pass through charging state . |
| 20 | Car charger input voltage/current | 9~15V/2.5A | 1.Car charger optional accessory 2. It only for charging by car charger, it can't work on pass through charging state |
| 21 | Capacity indiation by the voltage / capacity push button | Push button light blue(except item 1), 6pcs green LEDs indication capacity. | 1. power off or 2. in auto mode or 3. in manual mode after auto lock or 4. charging state The push button's indicator LED will light Blue color except item 1 as above state |
| 22 | Adjust voltage by the voltage / capacity push button | 6pcs green LEDs indicate 6scales voltage | in Manual mode when disconnected with loading by power output cord , The indicator LED will no light |
| 23 | Automatic locked the voltage scale while load current over | Auto mode: $\geq 500\text{mA}$ | The output voltage scale will auto lock while connected loading's current over |

| | | | |
|----|---|---|---|
| 23 | Scale while load current over the limited | Manual mode: $\geq 300\sim 500\text{mA}$ | while connected loading's current over this limited |
| 24 | Pass through charging function | Firstly offer power to Laptops working and charging Laptop's internal battery . Secondly charging MP3450L battery after Laptop's internal battery charged fully . | |
| 25 | Power interrupted timing for loading | 0ms (when loading current $\leq 2.0\text{A}$); 20ms (when loading current $> 2.0\text{A}$) | When working on pass through charging state |
| 26 | The Capacity extend port function | 1. connected with MP3460 for battery capacity extend to double or 2.connected with 3-pin cable connector or sun-booster adapter for solar panel charged . | |
| 27 | Over-charge protection voltage | 4.35V \pm 0.05V /cell, 26.1V \pm 0.3V/pack | |
| 28 | Over-discharge protection voltage | 3.1V \pm 0.05V/cell,18.6V \pm 0.3V/pack | |
| 29 | Temperature protection | 130 $^{\circ}\text{C}$ | |
| 30 | Typical weight | 420 \pm 20g | |
| 31 | Operation temperature | Charging: 0~40 $^{\circ}\text{C}$, Discharging: -10~50 $^{\circ}\text{C}$ | |
| 32 | Storage temperature | 1.-20~20 $^{\circ}\text{C}$ (one year) 2. -20~45 $^{\circ}\text{C}$ (three months) 3.-20~60 $^{\circ}\text{C}$ (one month) | |

IV. Operation guide –There are two situations:

1) . Indoor Application — working for Pass through charging





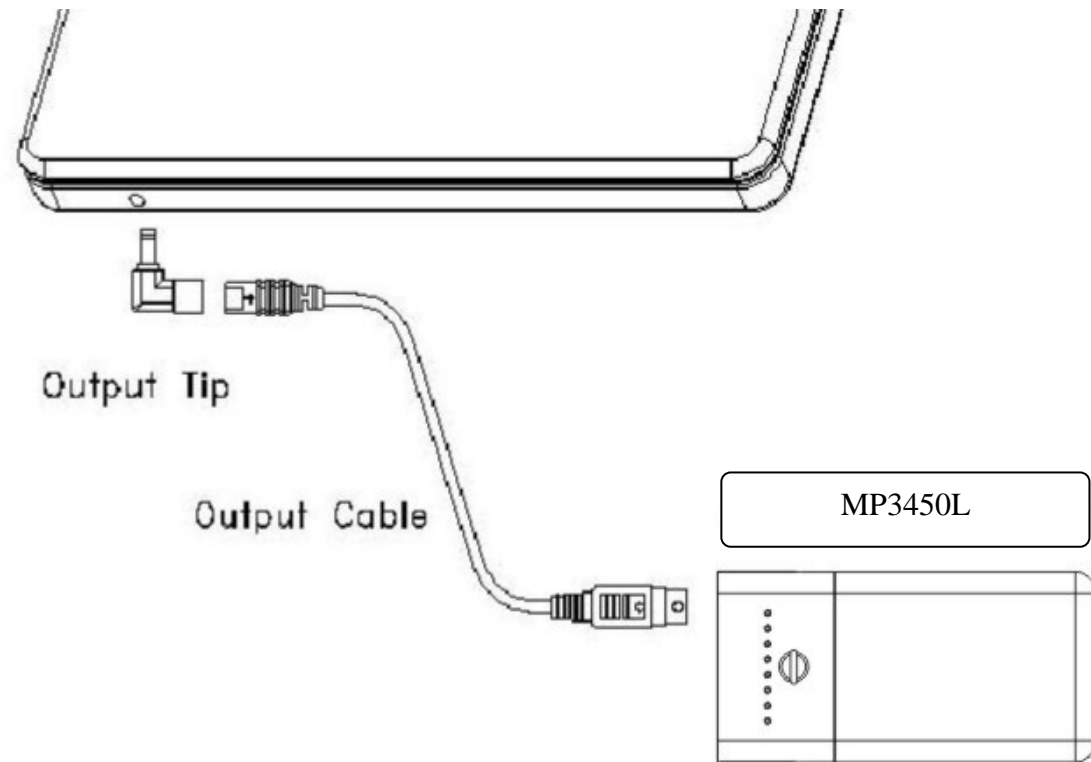
Power Adapter

Input Tip

1. The output of loading's original AC power adapter plug in MP3450L's DC IN jack ;or select suitable input adapter tip to transform; and the DC OUT port of MP3450L connected with Laptop's DC IN jack by the power output cable .The connect method as above connection diagram.
2. It can charge and power your device in the meantime, and will charge your device internal battery fully in priority, then charge the MP3450L from AC power adapter after .So it can keep the MP3450L is fully charged for urgently using of outdoor.
3. The voltage of DC OUT port is same as charging input voltage of DC IN charging port when work on pass through charging state . It doesn't matter work on which mode(auto/manual) or setting which voltage scale. The voltage scale green LED will according to the output voltage to indicate related voltage scale LED. Therefore, please use the original AC power adapter of Laptops to charge it. Or use the same specification of AC power adapter as the original one.

2). Outdoor application ———Back-up power for your device





Please check if the maximum current ; it's marked on the AC power adapter label of connected laptops is more than 4.5A before connect with the DC OUT port of MP3450L. It will shut down if demand loading current over MP3450L maximum output current 4.5A.

1. in the Manual mode : The output voltage scale is adjustable by pressing the push button when you select the Manual mode, and the related LED will turn light indicate the output voltage scale according to the specification marked on the label of original AC power adapter. You also can set the lower one scale voltage than standard specification to power the Laptop and not charge for the Laptop's internal battery ,thus advice can save the loss of

energy conversation.

2. in the Auto mode : The output voltage is non-adjustable, the output voltage will auto detected and setting for the notebook working voltage and then to auto load.
- The green LED will according to the output voltage to display related scale indicated LED. To press the capacity/voltage push button that only display battery capacity and can't adjust the output voltage when work on Auto mode.

V. Charging ways

Charging main body battery capacity by 3 way :

a. Charging by AC Power Adapter

The standard package is without AC Power Adapter. Please must connected with the original AC Power Adapter of Laptops. The output plug of original AC Power Adapter of loading device is connected to DC IN port for Charging. The push button's indicated LED will light blue color at the same time.

AC Power Adapter's specification: Must as same with Laptop's original one .

b. Charging by Car Charger

The output connecter of Car charger plug into DC IN port for charging.The push button's indicated LED will light blue color at same time.

The car charger is optional accessory.

Car charger's specification:

The output is directly connected to input of car charger.

- a. The input voltage/current of car charger : 9 ~14V / 2.5A
- b. The output voltage will follow up input voltage.
- c. It only can charging MP3450L by car charger. But can't apply to the pass through charging state.

C. Charging by Solar panel Charger

Due to the output's specification of Solar panel charger is different. There is 3 ways to charge by different cable & adapter plug into different po
Please check Solar panel charger specification firstly. There are 3 ways to charge as below:

Way1 : suitable for : a. The output current of solar panel : > 2A

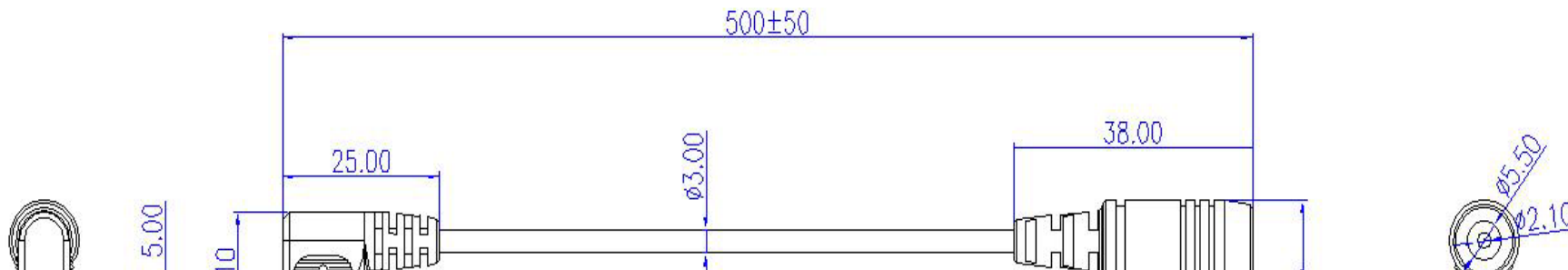
b. The OCV voltage of solar panel : 12V ~20 V

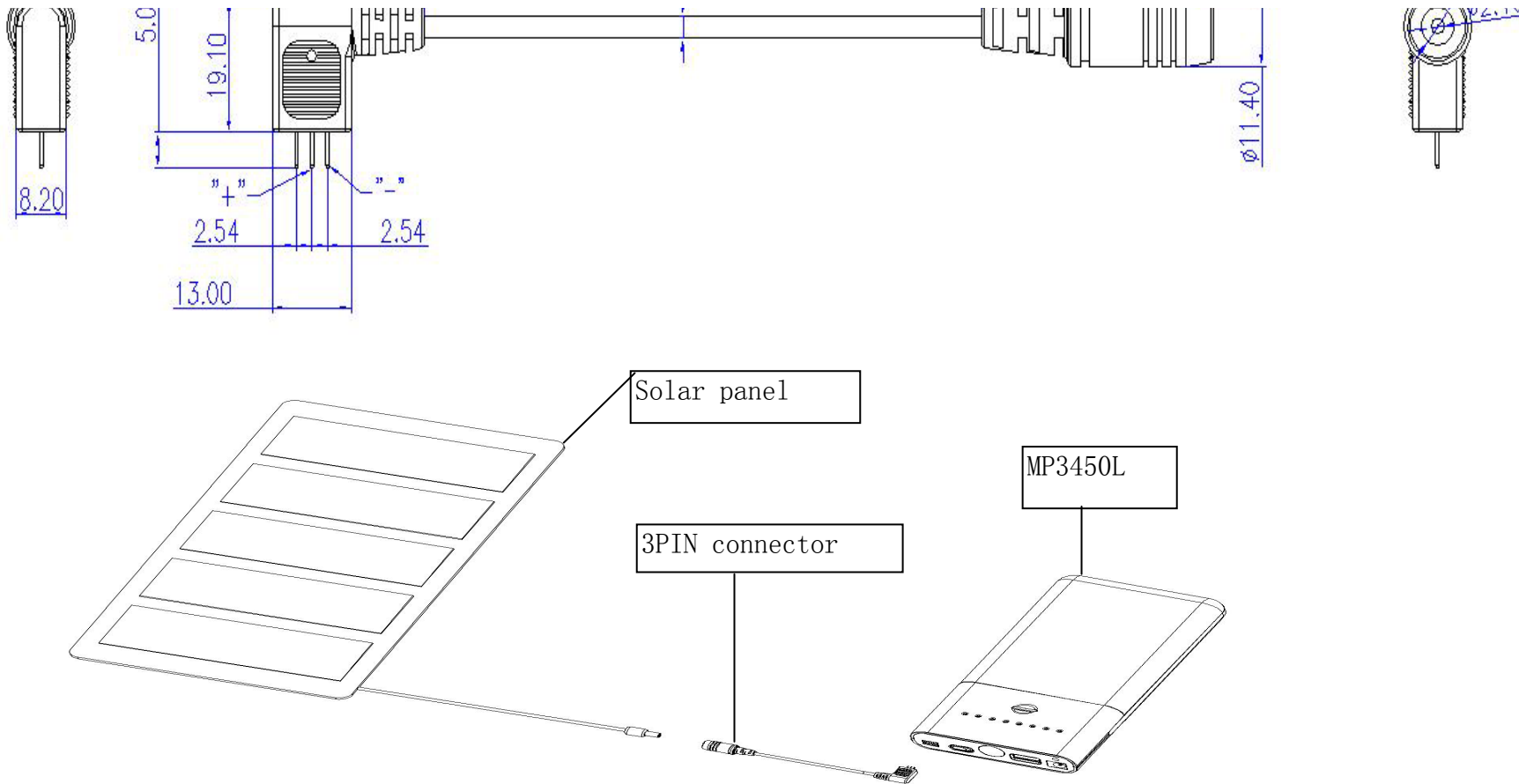
The output connector of solar panel charger directly plug into DC IN port

Way2 : suitable for : a. The OCV voltage of solar panel : 26V ~ 35V

b. The output current of solar panel : > 50mA

The output connector of solar panel charger plug into the DC IN of 3-pin cable; the output of 3-pin cable plug into the Capacity extend port of MP3450L. The 3-pin cable (optional accessory) diagram as below :



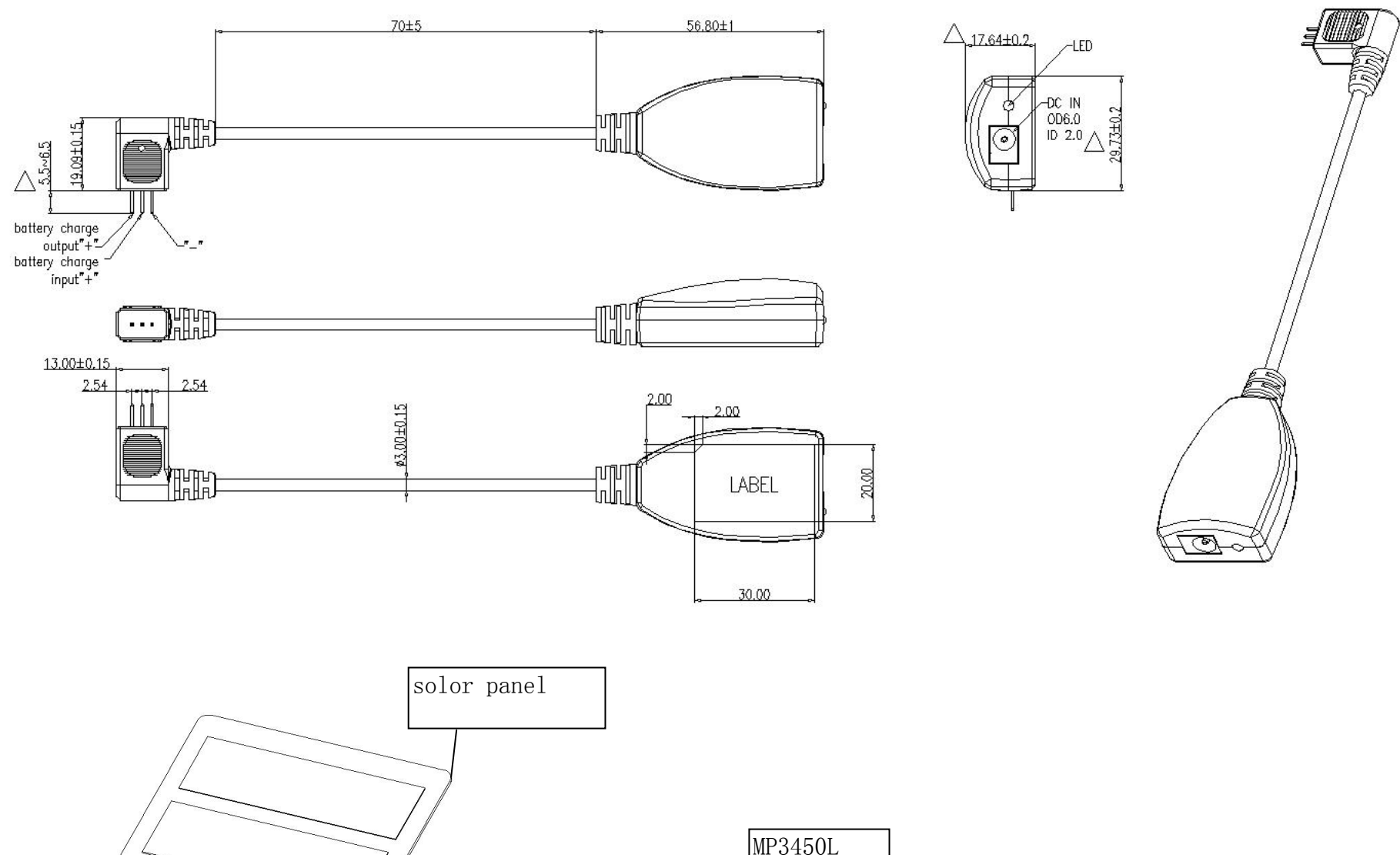


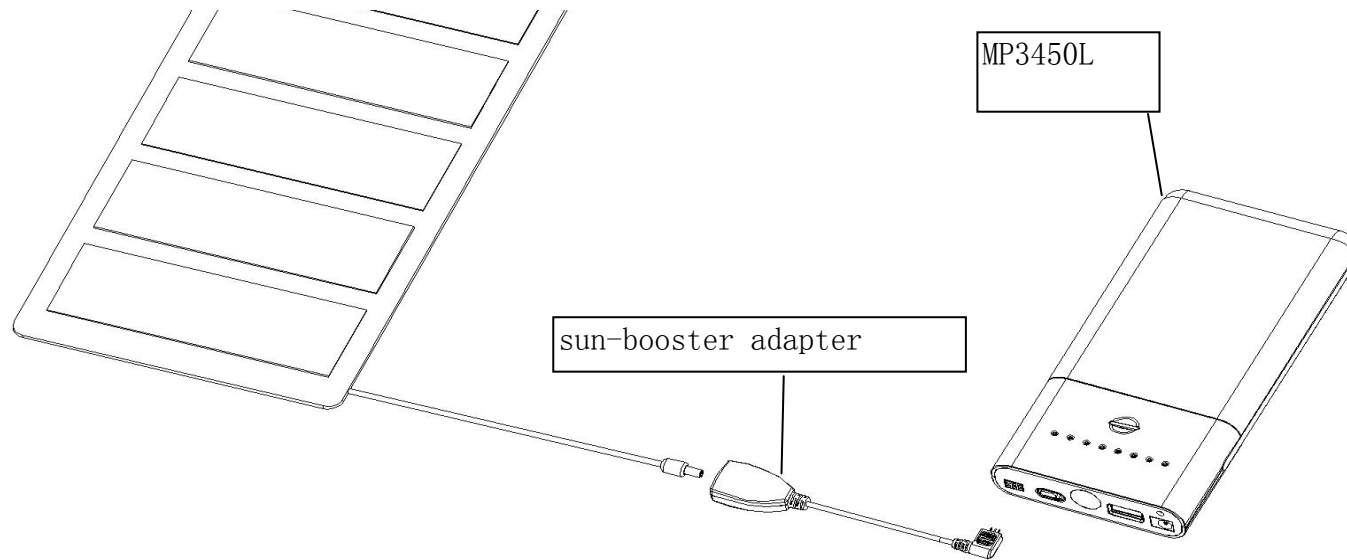
Way3 : suitable for : a. The OCV voltage of solar panel : 9V ~ 25V

b. The output current of solar panel : >100mA

The output connector of solar panel charger plug into the DC IN Jack of 3-pin sun-booster adapter; the output of 3-pin sun-Booster

adapter plug into the Capacity extend port of MP3450L. The 3-pin sun-booster adapter(optional accessory)diagram as below :



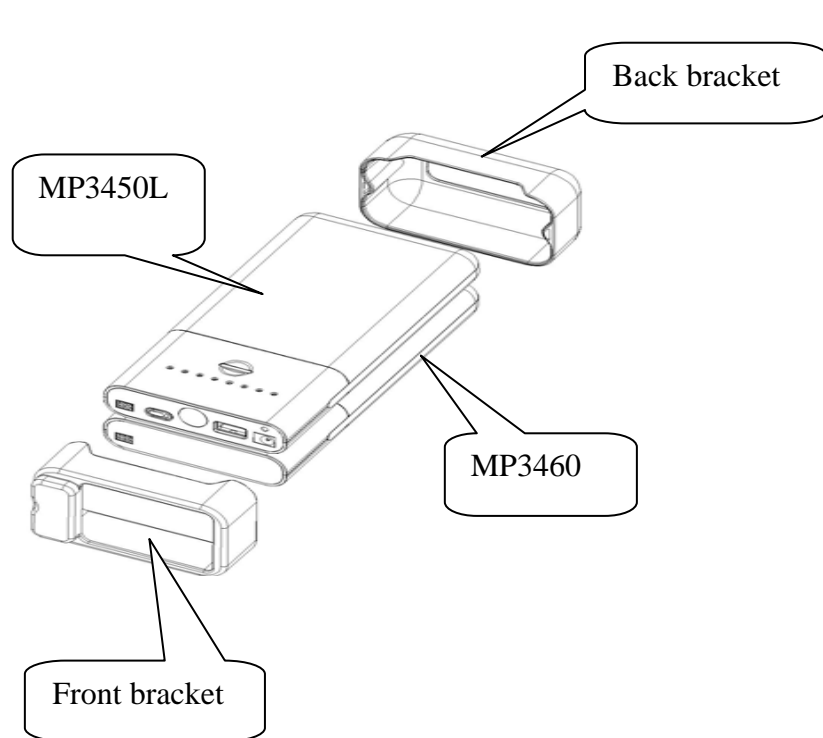


IV. Battery capacity expansion method

MP3450L can extend the battery capacity from 50/60W to 100/120W by connecting with the extra battery pack MP3460.

1. Place MP3450L on top of with both flat silver ends facing the same direction.
2. Connect the bracket with the 3-pin plugs inside to the silver ends of the devices. The 3-pin plugs will mate with the battery port on each of device, and the controls on the end of MP3450L will show through the bracket opening.
3. Connect the second bracket on the opposite end of the devices to hold the units together securely.
4. Use MP3450L as you would normally.

MP3450L with MP3460 assemble diagram as below:



Front connecting bracket



Back connecting bracket



V. Product package list

MP3450L main body



Input adapter tips



Output tips



Leather case



Punching bag



Output cable



Disc user guide